AMENDMENTS TO THE CLAIMS

1. (original) A flow-through capacitor system comprising a plurality of flow-through capacitor cells, each of said plurality of cells in electrical communication with a charge cycle sequence controller.

2. (previously presented) The flow-through capacitor system of claim 1, further comprising a plurality of current collectors and a flow spacer shared among said plurality of current collectors.

3. (original) The flow-through capacitor system of claim 1, which is operated such that multiple concentration bands exist simultaneously within a given material layer.

4. (original) The flow-through capacitor system of claim 1, further comprising a conductivity controlled valve between at least two of said plurality of current collectors.

5. (original) The flow-through capacitor system of claim 1, further comprising a flow stream parallel to at least two of said plurality of current collectors, with continuous purification and concentration streams directed to separate collection paths.

6. (original) The flow-through capacitor system of claim 4, wherein fluid is manipulated to form adjacent purification and concentration streams that are separately collected without need for a valve.

7. (original) The flow-through capacitor system of claim 1, wherein valves are individually triggered with charge cycles in order to produce a purified product stream.

8. (original) The flow-through capacitor system of claim 1, wherein said flow-through capacitor system has a staging efficiency of 50% or more.

9. (original) The flow-through capacitor system of claim 2, wherein said flow-through capacitor system has a power efficiency of 50% or more.

10. (previously presented) The flow-through capacitor system of claim 1, wherein the charge cycles of individual cells are synchronized to correspond with the arrival of a segment of purified water traveling serially through multiple cells.

11. (original) The flow-through capacitor system of claim 1, wherein voltage is incremented in a step wise fashion as cells are sequentially powered by adding them in series.

12. (original) The flow-through capacitor system of claim 1, wherein cells are powered by sequentially switching them together in parallel.

13. (original) The flow-through capacitor system of claim 1, whereby the voltage varies along the flow path.

14. (previously presented) The flow-through capacitor system of claim 1, wherein charged capacitor cells are used to power discharged capacitor cells.

15. (previously presented) The flow-through capacitor system of claim 14, comprising a DC to DC converter between cells or groups of cells.

16. (previously presented) The flow-through capacitor system of claim 1, wherein individual flow-through capacitor cells, or groups of cells, are controlled in a timed sequence.

17. (previously presented) The flow-through capacitor system of claim 16, wherein each of said cells is contained in a cell holder and each cell holder contains no more than one of said cells, said cell holder being a container, a cartridge holder, or a casing.

18. (previously presented) The flow-through capacitor system of claim 16, wherein the charge cycles between individual flow-through capacitor cells are either asynchronous or out of phase by at least one quarter second.

19. (previously presented) The flow-through capacitor system of claim 16, wherein the charge cycles are actuated by a timer, a conductivity reading, a voltage, or pH.

20. (previously presented) The flow-through capacitor system of claim 16, wherein valves to individual cells or groups of cells that dispose of waste, deliver purified fluid, or which recycle in flow loops are triggered synchronously or asynchronously together with the above charge cycles.

21. (previously presented) The flow-through capacitor system of claim 16, comprising for reducing peak wattage by at least 30%.

22. (previously presented) The flow-through capacitor system of claim 16, wherein each of said cells is actuated between one and 359 degrees out of phase.

23. (previously presented) The flow-through capacitor system of claim 16, wherein sequential operation of charge cycles follows the direction of flow.

24. (previously presented) The flow-through capacitor system of claim 16, comprising a power management system for sharing power between the flow through capacitor cells, said power management system comprising one or more of a battery, a fuel cell, and a generator.

25. (previously presented) The flow-through capacitor system of claim 16, wherein failed or short circuited cells are bypassed by means of a sensing circuit.

26. (previously presented) The flow-through capacitor system of claim 16, wherein either the purified product or concentrated waste segments of water from one or more cells or cell groups are combined together.

27. (previously presented) The flow-through capacitor of claim 26, wherein said system achieves better than 40% recovery or purification.

28. (previously presented) The flow-through capacitor of claim 26, wherein said segments of water are combined through a manifold.

29. (previously presented) The flow-through capacitor system of claim 16, wherein a dead volume due to the flow spacer is larger than the dead volume between the capacitor cell and the inside of the cartridge holder.

30. (previously presented) The flow-through capacitor system of claim 2, wherein two or more cells are contained within a single cell holder, said cell holder being a container, a cartridge holder, or a casing.

31. (previously presented) The flow-through capacitor system of claim 30, wherein the plurality of current collectors bracket a stack of true series electrode assemblies.

32. (previously presented) The flow-through capacitor system of claim 10, wherein current declines with each successive charge cycle.

33. (previously presented) The flow-through capacitor system of claim 10, wherein at least one of said cells differs in size from at least one other of said cells.

34. (previously presented) A method of charging a flow through capacitor system, comprising providing a source of DC power and distributing said DC power in sequential fashion to individual flow through capacitor cells in order to minimize a capacitive charging power surge.

35. (previously presented) The method of claim 34, further comprising using a voltage or amperage sensor to control sequence of actuation among a group of cells.